



The Takeaway

Policy Briefs from the Mosbacher Institute for
Trade, Economics, and Public Policy

Phantom Capital

How Regulation Weakens Texas Groundwater Resources



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Texans believe they own the water beneath their land and can freely sell or lease their water rights, but a patchwork of Groundwater Conservation Districts (GCDs) restrict such transactions. As a result, groundwater rights have become a phantom.

In his seminal work, *Mystery of Capital*, economist Hernando De Soto concluded that a system of formal property rights, wherein working capital is easily bought and sold, enables the creation of modern markets and fosters strong economic growth. Alternatively, ill-defined and inconsistent property rights

can result in dead capital with limited economic potential. Unfortunately, even in places with a history of protecting property owners, such as Texas, dead capital exists beneath the surface.

GROUNDWATER RIGHTS AND RULES IN TEXAS

When the Supreme Court of

WHAT'S THE TAKEAWAY?

Texas groundwater regulations create confusion between what people think they own and what they actually own.

Texas has ample groundwater supplies, but a patchwork of regulations prevents market forces from guiding groundwater to its best use.

Changing how groundwater is regulated would strengthen property rights and eliminate regulation-induced shortages.

Texas issued its first groundwater rights ruling in 1904, it laid a foundation for groundwater jurisprudence that has endured for over a century. The ruling (in *Houston Texas Central Railroad Company v. W.A. East*) asserted that because groundwater's movement is indeterminable, ownership occurs at the point of capture—and thus, the rule of capture was born.¹

While subsequent judicial interpretation has strongly upheld private ownership and the rule of capture,² the Conservation Amendment (Art. XVI, §59) of the Texas Constitution charged the legislature with conservation and development of all Texas' natural resources. Due to significant groundwater withdrawals from the Ogallala aquifer, the 51st Texas Legislature passed the Groundwater Conservation District Act of 1949. Figure 1 shows a map of the resulting Balkanized patchwork of groundwater districts, often spanning only one or two counties.³ GCDs can control the issuance of pumping permits, well spacing, and even exportation of groundwater outside their boundaries.

PHANTOM CAPITAL

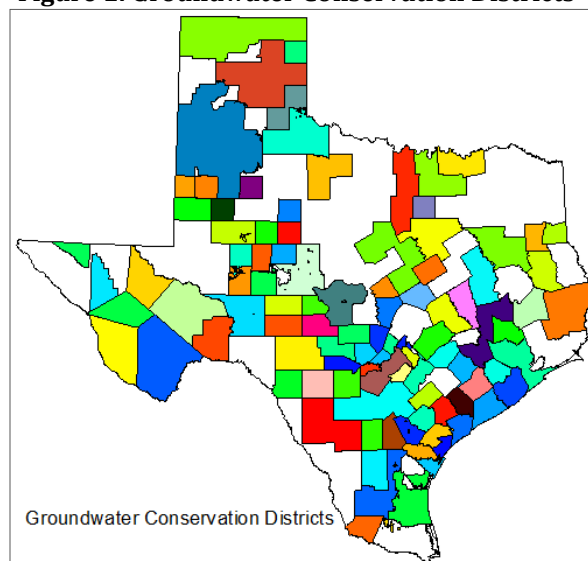
Over time, many landowners attempting to lease, sell, or otherwise utilize groundwater have been frustrated to the point of litigation by GCD controls over pumping permits. A classic case of such frustration involves Clayton Williams' attempt to transfer his pumping rights from irrigation to municipal use in order to export water outside the local GCD. Williams wanted to sell groundwater to the Midland and Odessa area while scaling back agricultural production. The Middle Pecos GCD board of directors and the

subsequent judicial appeal, however, denied the permit.⁴ Essentially, the disagreement was not about the amount of groundwater being pumped; rather, it involved the diversion from irrigation to municipal use. While Williams' groundwater capital is not completely dead because he can still use it for irrigation, the policies implemented by the Middle Pecos GCD have artificially reduced its value.

CONSERVATION CONCERNS

Yet, most observers recognize the need for some form of regulation. While the rule of capture system in Texas may have operated effectively when groundwater was abundant and the population was much smaller, the onset of droughts and increased usage changes things. Returning to the rule of capture with unrestricted pumping of groundwater would be a serious mistake. However, allocating groundwater towards its best use could be significantly advanced by amending the current regulatory system.

Figure 1: Groundwater Conservation Districts



Source: The Texas Water Development Board

If groundwater were allocated on a property right-based system, a more effective market reflecting accurate prices would emerge and lead to better resource allocation across the state

REGULATION GONE AWRY

In theory, GCDs are positioned to promote conservation, prevent overly rapid depletion of key aquifers, and aid the flow of groundwater to its best use. Unfortunately, they are executors of a flawed regulatory system. In effect, GCDs create small local monopolies where the cost of water is not reflective of actual groundwater scarcity and needs.

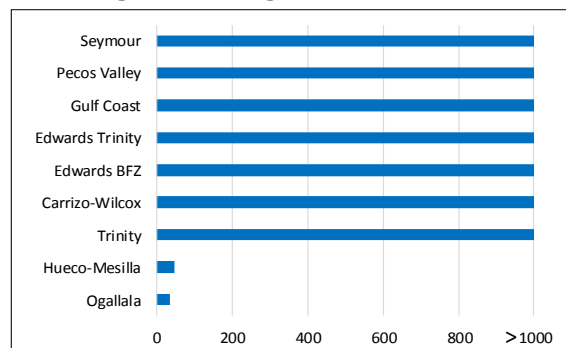
Figure 2 illustrates the number of years supply available in each of the nine major Texas aquifers, assuming that consumption from each aquifer grows at its historical rate. As the figure illustrates, groundwater is particularly scarce in the Ogallala (36 years) and Hueco-Mesilla (49 years) aquifers and abundant (>1,000 years) in the seven aquifers located in more populous areas.

If the cost of water reflected this actual pattern of scarcity, then we would expect to see water being exported from locations where it is abundant and imported into locations where it is relatively scarce. Instead, only 6 of the GCDs exported more than 1% of total

produced water, and groundwater prices have become unreasonably high in certain areas and unreasonably low in others.

If groundwater were allocated on a property right-based system, a more effective market reflecting true prices would emerge and lead to improved resource allocation across the state. Simple changes such as preventing GCDs from regulating groundwater based on its intended use or final destination would provide an opportunity for the free market to facilitate groundwater going to its best use.

Figure 2: Texas Aquifers—Years of Supply, assuming historical growth rates



Source: Brady et al. (2016) based on data from The Texas Water Development Board

REGULATORY ALTERNATIVES

As outlined in our team's report to Texas Comptroller Glenn Hagar, there are four alternative regulatory structures that would revive Texas phantom capital:

- Maintaining the existing GCD structure but changing the regulatory process;
- Replacing the GCDs with aquifer-based regulatory authorities;
- Replacing the GCDs with a statewide groundwater agency; or
- Creating groundwater bank accounts.⁵

Each of these options would greatly improve the allocation of water resources within Texas and would eliminate a regulatory system which indirectly and artificially determines the value of what should be a private property right.

Texas groundwater supplies are ample, but current regulation has caused them to become phantom capital with limited investment potential. Regulatory changes are needed that respect the rights of property owners and use market forces to promote the prudent best use of Texas' groundwater resources.

This policy brief draws heavily from a 2016 Bush School capstone report, *Reorganizing Groundwater Regulation in Texas*, by **Ross Brady, Wayne Beckermann, Amber Capps, Braden Kennedy, Peyton McGee, Kayla Northcut, Mason Parish, Abdullilah Qadeer, and Shuting Shan**. Their faculty advisor was **Dr. James M. Griffin**.

A video of their presentation to the client can be found at <https://youtu.be/Xc7Lfql7fEs>.

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Notes:

¹ Porter, C. R. Jr. (2012), The history of W.A. East v. Houston and Texas Central Railway Company, 1904: Establishment of the rule of capture in Texas water law or "He Who has the Biggest Pump gets the Water." *East Texas Historical Journal*, 50 (2), Article 13. Available at: <http://scholarworks.sfasu.edu/ethj/vol50/iss2/13>

² Brady, R., Beckermann, W., Capps, A., Kennedy, B., McGee, P., Northcutt, K., Parish, M., Qadeer, A., & Shan, S. (2016, May). *Reorganizing Groundwater Regulation in Texas, A Bush School Capstone Report to Hon. Glenn Hegar, Texas State Comptroller of Public Accounts*. [http://bush.tamu.edu/psaa/capstones/Final%20Report%20Reorganizing%20Groundwater%20Regulation%20in%20Texas%20\(3\).pdf](http://bush.tamu.edu/psaa/capstones/Final%20Report%20Reorganizing%20Groundwater%20Regulation%20in%20Texas%20(3).pdf)

³ The map also includes the Fort Bend and Harris-Galveston Subsidence Districts.

⁴ Beal, B. (2015, September 23). Williams permit denial upheld. *The Fort Stockton Pioneer*. Retrieved 11/24/2015 from http://www.fortstocktonpioneer.com/community/article_1be7f5da-621a-11e5-b007-4fb64d98be6c.html

⁵ Brady et al. (2016).

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